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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,384

12/08/2003

Nathaniel Ian Joos

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07/24/2006

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CANADA

EXAMINER

CANTELMO, GREGG

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/729,384	Applicant(s) IAN JOOS ET AL.	
	Examiner Gregg Cantelmo	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 27-30 is/are allowed.
- 6) ☒ Claim(s) 1,2,11-14,20,23,24 and 26 is/are rejected.
- 7) ☒ Claim(s) 3-10,15-19,21,22 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/8/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Priority***

1. Applicant's claim to Provisional Application No. 60/431,235, filed December 6, 2002 is acknowledged.

***Information Disclosure Statement***

2. The information disclosure statement filed March 8, 2004 has been placed in the application file and the information referred to therein has been considered as to the merits.

***Specification***

3. The abstract of the disclosure is objected to because it exceeds 150 words. A 150-word limit has been imposed by the USPTO to conform to PCT applications and Pre-Grant Publications. See 37 CFR 1.72 and rule changes applied thereto. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-182639-A (JP '639).

JP '639 discloses an electrochemical comprising: a membrane electrode assembly, a first reactant flow field plate 130 for providing a first reactant flow field

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disposed on one side of the membrane electrode assembly (MEA): a first seal disposed between the first reactant flow field plate 130 and the membrane electrode assembly for impeding leakage of process fluids of the electrochemical cell, a first gas diffusion layer (GDL) 126 disposed between the first reactant flow field plate 130 and the membrane electrode assembly for diffusing reactant from the first reactant flow field to the membrane electrode assembly; a second reactant flow field plate for providing a second reactant flow field disposed on the other side of the membrane electrode assembly and; a peripheral support structure (ends of gas diffusion members 126 and 124) for supporting the membrane electrode assembly at a periphery between the first reactant flow field and the first seal to impede substantial distortion of the membrane electrode assembly between the first reactant flow field and the first seal (Fig. 2 as applied to claim 1).

The first GDL 126 comprises a porous body for diffusing reactant from the flow field to the MEA, the peripheral support structure comprises an edge portion of the GDL in the region where the GDL and seal are in contact with one another and the edge portion of the GDL surrounds the porous central body of the GDL (Fig. 2 as applied to claim 2).

JP '639 further discloses a method of impeding leakage of process fluids from the electrochemical cell having a membrane electrode assembly, a first reactant flow field plate 130 for providing a first reactant flow field disposed on one side of the membrane electrode assembly. a seal disposed between the first reactant flow field plate and the membrane electrode assembly for impeding leakage of process fluids of

the electrochemical cell, and a second reactant flow field plate for providing a second reactant flow field disposed on the other side of the membrane electrode assembly; the method comprising: providing a gas diffusion layer 126 disposed between the first reactant flow field and the MEA, and providing the GDL 126 with an edge portion (the region where the GDL and seal are in contact with one another) for supporting the MEA at a periphery between the reactant flow field and the seal to impede substantial distortion of the membrane electrode assembly between the reactant flow field and the seal (Fig. 2, abstract and disclosure associated with Fig. 2 as applied to claim 11).

5. Claims 1, 2, 11-14, 20, 23-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,020,083 (Breault).

Breault discloses an electrochemical comprising: a membrane electrode assembly, a first reactant flow field plate 130 for providing a first reactant flow field disposed on one side of the membrane electrode assembly; a first seal 62 disposed between the first reactant flow field plate 12 and the membrane electrode assembly for impeding leakage of process fluids of the electrochemical cell, a first gas diffusion layer (GDL) 32 disposed between the first reactant flow field plate and the membrane electrode assembly for diffusing reactant from the first reactant flow field to the membrane electrode assembly; a second reactant flow field plate 16 for providing a second reactant flow field disposed on the other side of the membrane electrode assembly and; a peripheral support structure 52 for supporting the membrane electrode assembly at a periphery between the first reactant flow field 12 and the first seal 62 to impede substantial distortion of the membrane electrode assembly between the first

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reactant flow field and the first seal (Fig. 2 as applied to claims 1 and 20). The edge portion, impregnated with a silicone sealant (prior art claim 4) is held to be substantially impermeable to process fluids (as applied to claim 20).

The first GDL 32 comprises a porous body for diffusing reactant from the flow field to the MEA, the peripheral support structure comprises an edge portion 52 of the GDL in the region where the GDL 52 and seal 62 are in contact with one another and the edge portion 52 of the GDL surrounds the porous central body of the GDL32 (Fig. 2 as applied to claim 2).

Breault further discloses a method of impeding leakage of process fluids from the electrochemical cell having a membrane electrode assembly 40/48/44, a first reactant flow field plate 12 for providing a first reactant flow field disposed on one side of the membrane electrode assembly. a seal 62 disposed between the first reactant flow field plate 12 and the membrane electrode assembly for impeding leakage of process fluids of the electrochemical cell, and a second reactant flow field plate 16 for providing a second reactant flow field disposed on the other side of the membrane electrode assembly; the method comprising: providing a gas diffusion layer 34 disposed between the first reactant flow field 12 and the MEA, and providing the GDL 34 with an edge portion 52 for supporting the MEA at a periphery between the reactant flow field 12 and the seal 62 to impede substantial distortion of the membrane electrode assembly between the reactant flow field and the seal (Fig. 2, abstract and disclosure associated with Fig. 2 as applied to claim 11).

The edge portions 52 of the GDL are impregnated with a sealant (abstract as applied to claim 12).

The edge sealant is silicone based (prior art claim 4 as applied to claims 13 and 24).

With respect to claims 14 and 23, the edge portion 52 surrounds the body 34 of the GDL and is provided with a sealant impregnated into the edge portion. With respect to the gasket being a silk-screened gasket, this limitation is held to be a product-by-process claim.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

“The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature” than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292

(Fed. Cir. 1983). Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989). See MPEP section 2113.

In terms of the claimed structure, Breault is held to anticipate the structure of the seal of claim s14 and 23 (as applied to claims 14 and 23).

The GDL shown in Fig. 2 is a single unitary body (as applied to claim 26).

### ***Allowable Subject Matter***

6. Claims 3-10, 15-19, 21, 22 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: one of the prior art of record are considered to teach, suggest or render obvious the edge portion of claims 3 or 15 where the edge portion is reduced from one side of the porous body to provide a step between the porous body and edge portion (claims 3 and 25) or of the edge portion being thinner than the porous body (claims 15 and 21). Rather the edge portion and porous portion of the GDL of JP '639 is the same across the entire member.

And while U.S. Patent Application Publication No. 2003/0118889 (Smith) discloses a similar configuration, Smith does not enable the configuration shown in Fig. 2 in the priority document to which Smith claims priority to (Provisional Application No. 60/344,323) and for the disclosure which would have been relied upon, the earliest effective filing date of Smith would be December 20, 2002 which post-dates the earliest effective filing date of the instant application.



7. Claims 27-30 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record are considered to teach, suggest or render obvious the edge portion of claim 27 wherein a thickness of the edge portion is reduced from one side of the porous body to provide a step between the porous body and edge portion. Rather the edge portion and porous portion of the GDL of JP '639 is the same across the entire member.

And while U.S. Patent Application Publication No. 2003/0118889 (Smith) discloses a similar configuration, Smith does not enable the configuration shown in Fig. 2 in the priority document to which Smith claims priority to (Provisional Application No. 60/344,323) and for the disclosure which would have been relied upon, the earliest effective filing date of Smith would be December 20, 2002 which post-dates the earliest effective filing date of the instant application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

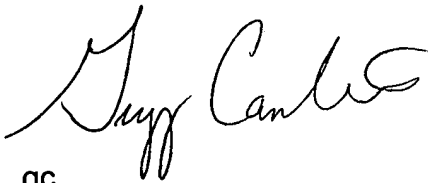
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



gc  
July 18, 2006

Gregg Cantelmo  
Primary Examiner  
Art Unit 1745